STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Selected Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation PON-12-605 –Natural Gas Fueling Infrastructure

CALIFORNIA
ENERGY COMMISSION

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DISCLAIMER

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PREFACE

The increased use of alternative and renewable fuels supports California's commitment to curb greenhouse gas emissions, reduce petroleum use, improve air quality, and stimulate the sustainable production and use of alternative fuels within California. Alternative and renewable transportation fuels include electricity, natural gas, biomethane, propane, hydrogen, ethanol, renewable diesel, and biodiesel. State investment is needed to fill the gap and fund the differential cost of these emerging fuels and vehicle technologies.

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies."

The statute also directs the California Air Resources Board (ARB) to develop guidelines to ensure air quality improvements. The ARB Air Quality Improvement Program (AQIP) Guidelines, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program and the AQIP*. The *AQIP Guidelines* require the Energy Commission, as the funding agency, to analyze the localized health impacts of ARFVTP-funded projects that require a permit (13 CCR § 2343).

The Energy Commission received proposals in response to Program Opportunity Notice PON – 12-605 for alternative fuels infrastructure and is considering approving and funding the projects described in this *LHI Report*. This report contains the project and site descriptions (including geographic locations), potential impacts and benefits, and outreach efforts as declared by the proposers in their documentation. No potential exists for adverse health effects from the nominal increase in criteria emissions from the proposed projects.

ABSTRACT

California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, § 2343(c)(6), requires the California Energy Commission to consider the localized health impacts when selecting projects for funding. For each funding cycle, the Energy Commission is required to analyze localized health impacts for projects proposed for program funding that require a permit.

This *Localized Health Impacts Report* reviews the project proposals under consideration for funding that were submitted in response to the Natural Gas Fueling Infrastructure solicitation PON-12-605 by the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This *Localized Health Impacts Report* contains project and site descriptions (including geographic locations), and potential impacts as contained in the proposals.

This *Localized Health Impacts Report* analyzes the aggregated locations of projects, the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including but not limited to, communities of minority populations or low-income populations, as declared by the project proposers or also as determined by Energy Commission staff. This report identifies outreach to community groups and other affected stakeholders, also as declared by the project proposers.

Keywords: Air pollution, air quality, air quality improvement program (AQIP), Air Resources Board (ARB), alternative fuel, Assembly Bill (AB) 118, assessment, biodiesel, California Environmental Quality Act, criteria emissions, demographic, Energy Commission, environmental justice, Environmental Justice Screening Method (EJSM), environmental justice (EJ), greenhouse gas emissions, localized health impact (LHI), unified school district (USD), liquefied natural gas (LNG), compressed natural gas (CNG)

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EXECUTIVE SUMMARY

Under the *California Code of Regulations Title 13, (CCR § 2343),* this *Localized Health Impacts Report* describes the alternative fuel infrastructure projects proposed for Alternative and Renewable Fuel and Vehicle Technology Program (ARVTP) funding that may or may not require a conditioned or discretionary permit or environmental review, such as conditional use permits, air quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. This report does not include projects requiring only residential building permits, mechanical/electrical permits, or fire/workplace safety permits, as these are determined to have no likely impact on the environment.

The California Energy Commission is required to assess the localized health impacts of the projects proposed for ARVTP funding under the Natural Gas Fueling Infrastructure solicitation PON-12-605. This *Localized Health Impacts Report* focuses on the potential impacts the projects may or may not have on a particular community, particularly those communities that are considered especially vulnerable to emissions increases within their community. For projects located in high-risk communities, this report assesses the impacts from criteria emissions/air toxics, the air quality attainment status, and mitigation plans, if available. This *Localized Health Impacts Report* includes information about the proposer's outreach efforts, including public notices and community outreach.

Environmental justice communities, low-income communities, and minority communities are considered to be the most impacted by any project that could result in increased criteria and toxic air pollutants within an area because these communities typically have the most significant exposure to the emissions. Assessing these projects and the communities surrounding them is important because of the health risks associated with these pollutants. Preventing health issues from air pollution in any community is important, but it is especially important to minimize any negative impacts in communities that are already considered to be at risk due to their continued exposure to these contaminants.

The projects assessed in this report include upgrading and installing compressed natural gas (CNG) and liquefied natural gas (LNG) fueling stations. During normal operations, none of these facilities generate criteria emissions, particulate matter (PM) or air toxics at any appreciable level. The projects in this *Localized Health Impacts Report* are assessed for potential health impacts for the communities in which they are located, which vary in terms of socioeconomic factors. Based on this analysis, it is not anticipated that the implementation of the projects will have negative impacts on surrounding communities because there will not be a net increase in criteria and toxic emissions, specifically those communities that are considered most vulnerable. Potentially, the projects stand to provide improved quality of life through cleaner air.

CHAPTER 1:
Projects Proposed for Funding

This chapter summarizes the projects proposed for Energy Commission Funding. The projects in this *LHI Report* are:

- Lodi Unified School District – 1305 E. Vine St., Lodi.
- City of Sacramento – 2812 Meadowview Rd., Sacramento.
- City of Santa Clarita –Vista Canyon, Santa Clarita
- County of Santa Clara – 2265 Junction Ave., San Jose.
- Murrieta Valley Unified School District – 41870 McAlby Ct., Murrieta.
- Waste Management Inc.
    - 17700 Indian St. Moreno Valley.
    - 2615 Davis St., San Leandro.
- City on Anaheim – 955 South Melrose, Anaheim.
- California Clean Fuels – 15330 South Woodruff Ave., Bellflower.
- Poway Unified School District – 13626 Twin Peaks Rd., Poway.
- Alameda County Industries, LLC – 610 Aladdin Ave., San Leandro.
- Garden City Sanitation, Inc. – 1080 Walsh Ave., Santa Clara.

CHAPTER 2:
Approach, Definitions, and Projects Proposed for Funding

The Energy Commission, through the Alternative and Renewable Fuels and Vehicle Technology Program (ARFVTP), released a competitive Grant Solicitation and Application Package on November 29, 2012. The application due date was February 7, 2013. Grant Solicitation PON-12-605 sought to fund projects that establish infrastructure necessary to store, distribute, and dispense compressed or liquefied natural gas.

The projects assessed in this report include installing and upgrading compressed natural gas (CNG) and liquefied natural gas (LNG). During normal operations, none of these facilities generate criteria emissions, particulate matter (PM), or air toxics at any appreciable level.

The Energy Commission is required to analyze and publish this *LHI Report* for public review and comment for a period of 30 days. Based on the Energy Commission's interpretation of the Air Quality Improvement Program (AQIP) Guidelines, this *LHI Report* provides information about the communities surrounding the potential project sites and assesses the potential impacts to public health in those communities as a result of the project. This report is prepared under the *California ARB AQIP Guidelines*, *California Code of Regulations*, *Title 13, Motor Vehicles*, *Chapter 8.1 (CCR § 2343)*:

> "(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider environmental justice consistent with state law and complete the following:
>
> > (A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.
> >
> > (B) Projects must be selected and approved for funding in a publicly noticed meeting."

This *LHI Report* is not intended to be a detailed environmental health or impact analysis of projects potentially to be funded by the program nor is this assessment intended to be a substitute for the comprehensive environmental review conducted by regulatory agencies during the California Environmental Quality Act (CEQA) process. The application of CEQA

would provide a more detailed analysis of the potential for adverse environmental effects of the proposed projects.

This report collects available information about the potential air quality impacts of the proposed projects and provides a collective, narrative analysis of the potential for localized health effects from those projects. The AQIP Guidelines mandate that the Energy Commission track the projects' progress through the CEQA process and ensure a commitment exists from the proposers to complete all mitigation measures required by the permitting agency before they receive the first funding allocation.

Staff reviewed results from the Environmental Justice Screening Method (EJSM) to identify projects located in areas with social vulnerability indicators and the greatest exposure to air pollution and associated health risks.[1] The EJSM was developed to identify low-income communities highly affected by air pollution for assessing the impacts of climate change regulations, specifically Assembly Bill 32 (Núñez/Pavley, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006.

The EJSM identifies the various levels of risk in regions throughout California, and high-risk communities are considered especially vulnerable to even the smallest impacts. The EJSM integrates data on exposure to air pollution, cancer risk, ozone concentration and frequency of high ozone days, race/ethnicity, poverty level, home ownership, median household value, educational attainment, and sensitive populations (populations under 5 years of age, or over 65 years of age).

The ARB applied the method to the San Francisco Bay Area, San Joaquin Valley, and California's desert region. However, the results consider only income among the list of social vulnerability indicators. For communities not yet assessed in the EJSM, the Energy Commission identifies high-risk areas as those in nonattainment basins for ozone, particle pollution, or particulate matter (PM) 2.5 and PM 10, along with populations that have high poverty and minority rates as well as a high percentage of sensitive populations.

This contains detailed assessments for all projects proposed for funding. This is most important for those located in low-income communities that are highly impacted by air pollution.

Permits

For this assessment, the Energy Commission interprets "permits" to connote discretionary and conditional use permits because they require a review of potential impacts to a community and

1 California Air Resources Board (ARB), *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making, 2010.* (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

the environment before issuance. For air permits, local air districts conduct a New Source Review (NSR) to determine the emission impacts. Since ministerial-level permits, such as building permits, do not assess public health-related pollutants, the Energy Commission staff does not assess projects requiring only ministerial level permits in this report. An overview of the permit requirements for identified projects potentially to be located in at-risk communities is included in the project overviews in this *LHI Report*.

Demographic Data

Staff collected information on ethnicity, age, and income for the city/community where the potential project, if funded, would be located. The information identifies those communities with higher minority populations, lower incomes, and highly sensitive groups based on age. For this assessment, staff identifies sensitive populations as individuals younger than 5 years of age and older than 65 years of age. The demographic data for the proposed project sites is provided in Appendix B.

Emissions

Staff collected information about predicted emissions from the project proposals. The emissions considered for this assessment include those from additional traffic.

Community Status of Proposed Projects

The following community status descriptions for the proposed projects is based on the ARB *Proposed Screening Method,* which integrates data to identify low-income communities that are highly impacted by air pollution.[2] The California State Implementation Plans (http://www.arb.ca.gov/planning/sip/sip.htm) are used as a source for public notices for attainment plans. The *Green Book Nonattainment Areas for Criteria Pollutants* (http://www.epa.gov/oaqps001/greenbk) is also used as an information source for this assessment.

Project Descriptions

The projects proposed for funding are LNG and CNG fueling stations. These stations will be fueling heavy-duty vehicles, like garbage trucks and busses, and light-duty vehicles, like cars and vans.

Station projects such as this serve an important role in promoting diesel displacement and achieving reductions of oxides of nitrogen (NOx), PM, and greenhouse gases. Well-located and sufficiently equipped CNG/LNG station infrastructure is essential to ensuring fleet and

2 ARB, *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution, 2010* (Sacramento, California).

consumer acceptance of natural gas vehicles as viable alternative to gasoline and diesel. These stations will provide significant sustainability benefits to the region and state, by increasing the quality, accessibility, and scale of LNG and CNG refueling options.

Chapter 3:
Location Analysis and Community Impacts

Based on the staff's assessment of the proposed projects, it is expected that none of the surrounding communities would be disproportionately impacted by the implementation of the projects. For this *LHI Report*, environmental justice (EJ) indicators are evaluated as follows.

- A ***minority EJ*** is indicated if a minority subset represents more than 30 percent of a given city's population.

- A ***poverty level EJ*** is indicated if a city's poverty level exceeds California's poverty level (for the entire state – 13.7 percent).

- An ***unemployment EJ*** is indicated if a given city's unemployment rate exceeds the state of California's unemployment rate (for the entire state – 10.9 percent as of January 2012).

- An EJ indicator is also noted for cities where the ***percentage of persons younger than 5 years of age or older than 65 years of age*** is 20 percent higher than the average of the percentage of persons under 5 years of age or over 65 years of age for the entire state. (For the entire state, the percentage of persons under the age of 5 years is 6.8 percent, and the percentage of persons over the age of 65 years is 11.4 percent.)

Of the 11 proposed cities and counties (two projects are in San Leandro), five have minority EJ indicators. The poverty EJ indicator exists in four locations for the planned sites, and three cities have unemployment EJ indicators. The age EJ indicator exists in no proposed locations. The proposed projects are expected to have a net benefit by reducing emissions and leading to improved air quality. While overall air quality depends on a number of factors, the Energy Commission expects that air quality will improve over time where the sites are proposed due to the reduced use of petroleum. Appendix A of this *LHI Report* covers the cities with EJ indicators that are described as minority EJ, poverty level EJ, unemployment EJ, and age EJs.

Staff identifies high-risk communities using the following factors: (1) those located in nonattainment air basins for ozone, PM 10 and PM 2.5, (2) those with high poverty, minority population, and/or unemployment rates, and (3) those with a high percentage of sensitive populations (under 5 years of age and over 65 years of age). Those designated as high-risk communities would be located in nonattainment air basins and have one or more of the other two factors.

CHAPTER 4:
Summary

If funded, the proposed projects would result in 11 cities and counties for LNG and CNG fueling stations. Appendix A lists the cities (or counties) in which the sites are proposed to be located. The sites will increase the widespread use of alternative fuel vehicles. As more alternative fuel vehicles enter the market and begin to displace gasoline and diesel vehicles, tailpipe pollutants will decrease significantly. The anticipated impacts to the cities where these projects would be located are positive in terms of cleaner air and anticipated greenhouse gas reductions.

Of the 11 cities and counties listed in Appendix A (with projects proposed for 12 sites), the majority (5) have no EJ indicators, 2 have one EJ indicator, 2 have two indicators, 2 have three indicators, and none have four EJ indicators. The anticipated benefit from these projects for the people who live in these cities is highly likely, if not certain, to be positive. More demographics for the cities is contained in Appendix B. Appendix B contains information on persons below the poverty level, black persons, American Indian and Alaska Native, persons of Hispanic or Latino origin, white persons, and persons under 5 years of age and over 65 years of age. The unemployment rates for the various cities are also given in Appendix B.

The facilities stand to nominally increase traffic, which would increase traffic-related pollution. Yet, a net benefit is realized from less petroleum use and more alternative fuel use as a result of these projects.

Table 1: Proposed Sites With EJ Indicators

	11 Different Sites	Percent
No EJ Indicators	5	45.4%
One EJ Indicator	2	18.2%
Two EJ Indicators	2	18.2%
Three EJ Indicators	2	18.2%
Four EJ Indicators	0	0%
		100.0 Total

Source: Energy Commission staff analysis

CHAPTER 5:
Acronyms

Air Quality Improvement Program (AQIP)
(California) Air Resources Board (ARB)
Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP)
Alternative fuel vehicle (AFV)
American Society for Testing and Materials (ASTM)
California Energy Commission (Energy Commission)
California Environmental Quality Act (CEQA)
Compressed natural gas (CNG)
Emission Reduction Credits (ERC)
Environmental justice (EJ)
Environmental Justice Screening Method (EJSM)
Liquefied natural gas (LNG)
Localized health impact (LHI)
New Source Review (NSR)
Particulate matter (PM)
Program Opportunity Notice (PON)
Volatile organic compound (VOC)

APPENDIX A:
Cities With EJ Indicators

Table A-1: Cities With EJ Indicators

	Minority	Poverty Level	Unemployment Rate	Age	Proposal Numbers
Anaheim	X	X			19
Bellflower	X				6
Lodi	X	X	X		34
Moreno Valley	X	X	X		31
Murrieta					16
Poway					33
Sacramento		X	X		37
San Jose	X				4
San Leandro					13, 5
Santa Clara					24
Santa Clarita					8

Source: Energy Commission staff analysis

APPENDIX B:

Demographic Data

Table B-1: Demographic Data for Cities With EJ Indicators[7] (percent)

2010 Data	Persons Below Poverty Level	Black persons	American Indian and Alaska Native	Persons of Hispanic or Latino Origin	White persons	Persons under 5 years of age	Persons over 65 years of age	Un-employment rate
San Leandro	9.9	12.3	0.8	27.4	27.1	6.2	13.8	8.1
Santa Clarita	7.7	3.2	0.6	29.5	56.1	6.3	9.6	6.2
Murrieta	5.7	5.4	0.7	25.9	55.7	7.0	10.1	7.3
Poway	4.8	1.6	0.6	15.7	69.1	5.1	12.3	5.7
Santa Clara	8.9	2.7	0.5	19.4	36.1	7.8	10.0	6.8
Bellflower	13.4	14.0	1.0	52.3	19.5	7.6	8.6	10.3
San Jose	11.1	3.2	0.9	33.2	28.7	7.3	10.1	8.3
Anaheim	14.3	2.8	0.8	52.8	27.5	7.7	9.3	8.7
Sacramento	18.6	14.6	1.1	26.9	34.5	7.5	10.6	11.6
Moreno Valley	18.2	18.0	0.9	54.4	18.9	8.4	6.3	12.8
Lodi	15.8	0.8	0.9	36.4	53.4	7.9	13.5	11.0

5, 8 http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=133 and http://www.bls.gov/eag/eag.ca.htm
6, 7 http://quickfacts.census.gov

Source: Energy Commission staff analysis